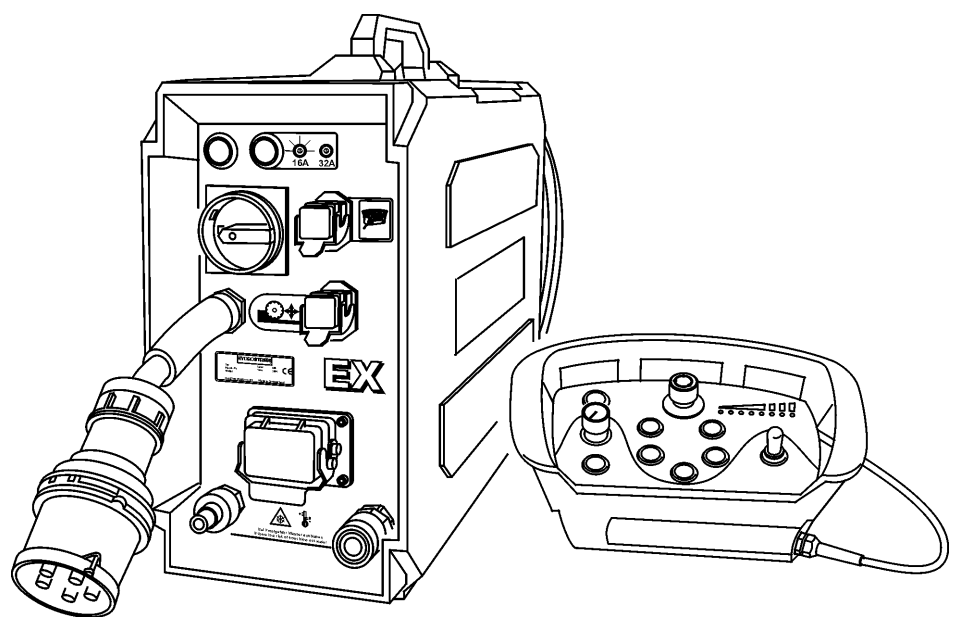


Operating Instructions

Spare parts list

EX control unit

Index 000



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0 Introduction

0.1 Congratulations!

You have decided to buy an advanced, tried and tested Hydrostress system and have thus acquired a highly sophisticated and reliable state-of-the-art unit.

Thanks to the stress we place on quality assurance, your Hydrostress system is another top-of-the-range Swiss product:

- High performance
- Reliable operation
- High portability
- Easy handling
- Low maintenance costs

Only original Hydrostress spare parts ensure quality and interchangeability.

In the case of neglected or inappropriate maintenance, we refuse to accept any warranty commitment as specified in our terms of delivery.

Any repair work is to be carried out by trained personnel only.

Should you need more details concerning your Hydrostress system in order to keep it in perfect condition, please contact our after-sales service for further information.

We hope that you will not experience any problems while working with your Hydrostress system.

TYROLIT Hydrostress AG

Management

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0.2 Validity of these Operating Instructions

This manual is only valid for the following system:

EX control unit

0.3 Standards

These Operating Instructions have been prepared in accordance with

CE Machinery Directive Appendix I and with the relevant standards in force at the time of printing.

0.4 Delimitation of the system

These Operating Instructions describe the use of the EX control unit.

1 Product description

1.1 Important information on the EX control unit

1.1.1 Main components

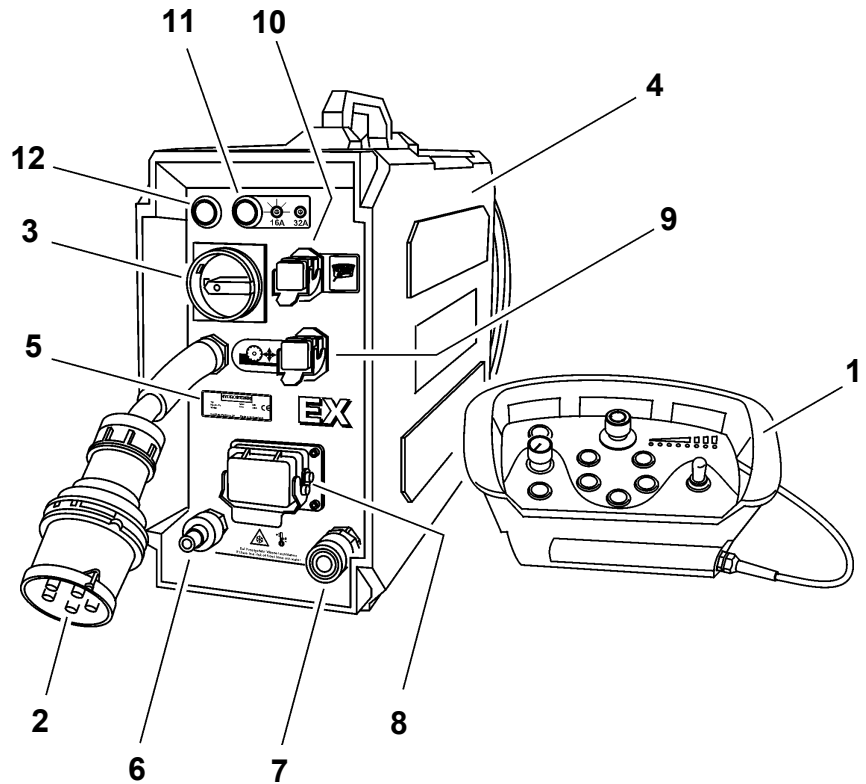


Fig. 1-1 Main components

- | | |
|-------------------------------------|---|
| 1 Remote controller | 9 Connection coupling
Feed motor |
| 2 Mains connector | 10 Connection coupling
Remote controller |
| 3 Main switch | 11 Mains system selection button |
| 4 Housing with grip | 12 Reset button |
| 5 Name plate | |
| 6 Water stem / water inlet | |
| 7 Water coupling / water outlet | |
| 8 Connection coupling
Main motor | |

1.1.2 Application

The EX control unit is designed and built for the following application:

- The EX control unit must only be used as a system component of the EX wall saw
- Cutting of concrete (including reinforced), masonry and natural stone
- Cutting of parting cuts, flush cuts, and cross-cuts in ceilings, floors or walls.

The applicable mandatory limitations on use and parameters are contained in Chapter 1 "Technical data" 1.2, ¶ 1-5

1.1.2.1 Safety measures

Any use other than for the intended purpose (see Chapter 1.1.2, ¶ 1-2), constitutes abuse or misuse.

Since improper use or misuse can sometimes result in considerable danger, here details of what we believe constitutes improper use or misuse.

The following applications are prohibited:

- Cutting without the safety devices provided
- Cutting wood, glass and plastics
- Cutting without system and tool cooling
- Cutting in explosion-protected areas
- Cutting loose parts
- Incorrect or absence of waste water disposal (saw sludge)

1.1.3 Workplace and danger areas

Allow enough room for manoeuvre to ensure danger-free working.

Make sure you have sufficient lighting at your workplace.

Clearly cordon off the danger area so that no person can enter the danger area during sawing.

The front, underneath and rear of the sawing area must be protected so that persons or equipment cannot be harmed by falling parts or sawing sludge, or by the protruding cutting tool.

Secure lumps of concrete that have been loosened against falling.

Breathing in the water fog that is created is a health hazard. Ensure adequate ventilation in sealed-off areas.

The sludge resulting from cutting is very greasy. Remove this or ensure that you or other people do not slip on it.

1.1.4 EC Declaration of Conformity

Description	Electric control unit
Type designation	EX control unit
Year of construction	2004

We declare under our own liability that this product complies with the following directives and standards:

1.1.4.1 Directive applied:

European Machine Directive (Machinery Directive) 98/37/EEC
European EMC Directive 89/336/EEC
European Low Voltage Directive 73/23/EEC

1.1.4.2 Standards applied:

EN 12100-1	Safety of machines – basic concepts, general design
EN 12100-2	principles
EN 294	Safety of machines – Safety distances to prevent upper limbs reaching danger areas
EN 349	Safety of machines – Safety distances to avoid crushing of body parts
EN 61000-4-4	Electromagnetic Compatibility (EMC)
EN 61000-4-5	Electromagnetic Compatibility (EMC)
EN 61000-6-2	Electromagnetic Compatibility (EMC)

TYROLIT Hydrostress AG



Rolad Kägi
Department Manager

1.1.5 Name plate

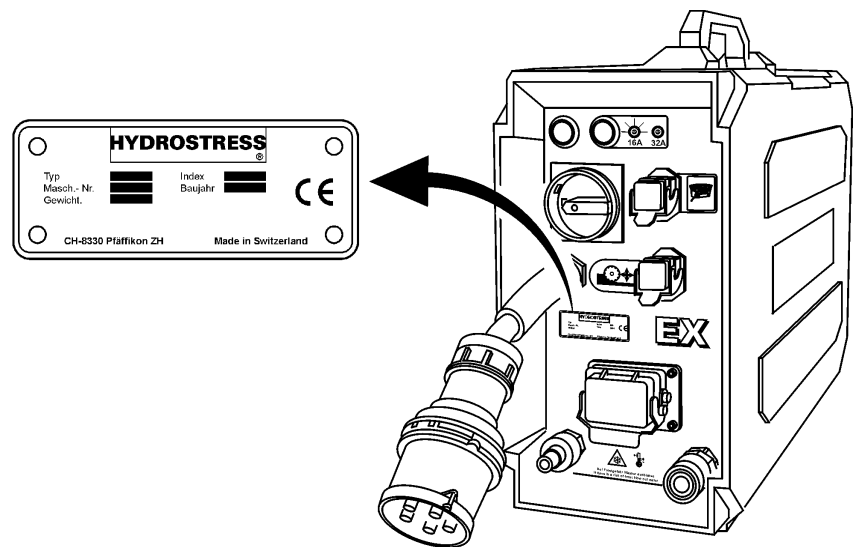


Fig. 1-2 Name plate

1.2 Technical data

1.2.1 EX control unit

1.2.1.1 Measurements

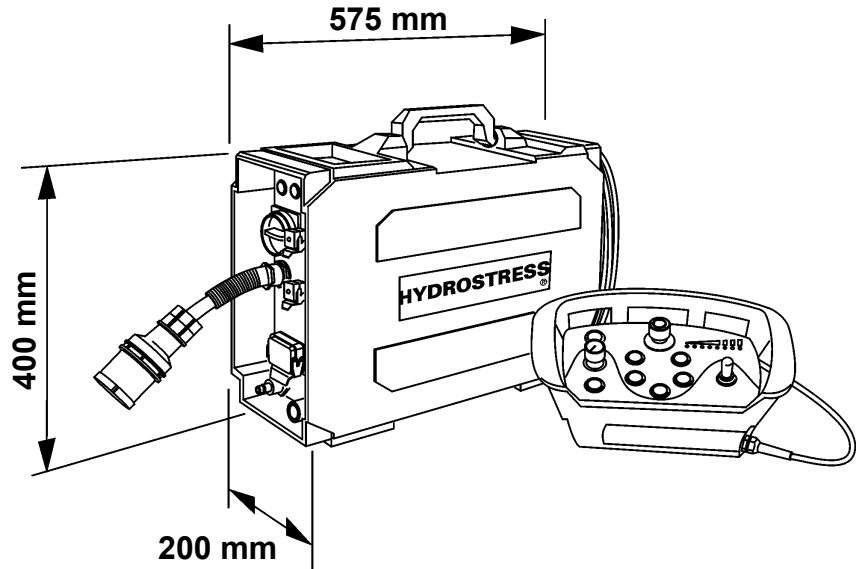


Fig. 1-3 Measurements

1.2.1.2 Weight

EX control unit incl. remote controller	23 kg
Remote controller only, with cable	2.5 kg

1.2.1.3 Protection class

IP 65

1.2.1.4 Operational temperature range

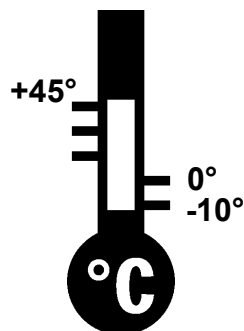


Fig. 1-4 Operational temperature range -10°C to +45°C

1.2.1.5 Connected loads

360-460 VAC / 50Hz / 60Hz

1.2.1.6 Current consumption

16A-32A (400V/50Hz)

1.2.1.7 Output

Output at 16A	8 kW
Output at 32A	11 kW

1.2.1.8 Internal control voltages

Computer / Remote controller	24 VDC
Feed drives	48 VDC
Main drive unit	400 VAC, 0....1000Hz Frequency converter

1.2.1.9 Water

Cooling of the control unit	Water cooling of the power semiconductors
Cooling water flow rate	min. 4 l/min. at max. 25°
Water connection	min. 2 bar, max. 6 bar

1.2.2 Noise level

Depending on the working environment, the EX control unit can cause excessive noise during operation.

The noise can cause permanent harm to the hearing of operating personnel and of other people nearby within a short time.

Ear protectors must therefore always be worn while working.

**Danger**

Noise danger!

When using the EX control unit hearing protection must be worn.

If this instruction is not followed irreparable hearing damage may result.

1.3 Scope of supply EX control unit

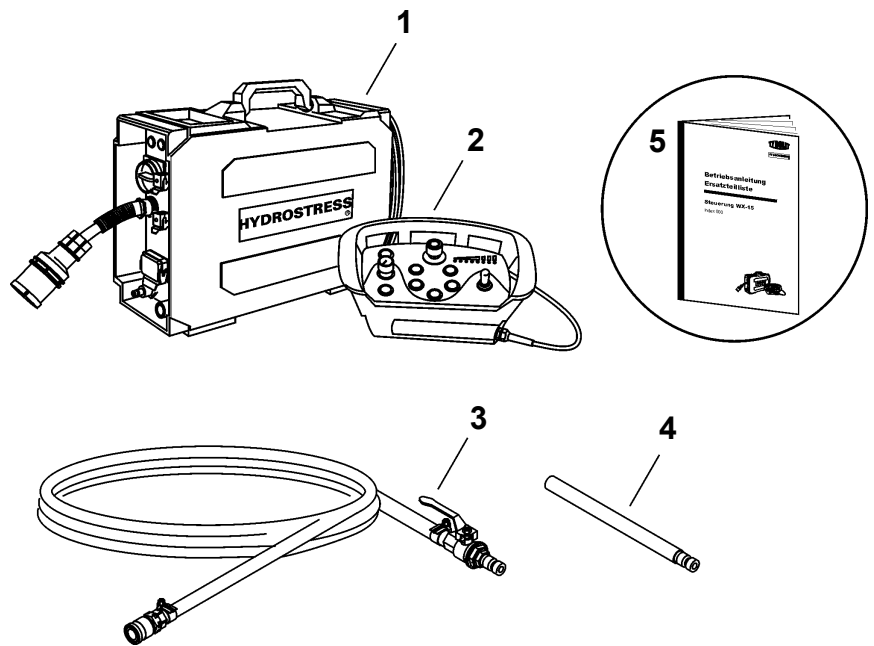


Fig. 1-5 Scope of supply

- 1 EX control unit
- 2 Remote controller EX
- 3 8m water hose with valve
- 4 Blow out hose
- 5 Operating Instructions / Spare parts list

2 Safety instructions

2.1 General

2.1.1 Target audience

This chapter describes the safety instructions that are essential to follow when using the EX control unit.

All persons who work on and with the EX control unit, have a duty to read and understand the chapters of the Operating Instructions relevant to their particular activities.

This applies in particular to the “Safety instructions” chapter which is mandatory for all persons and activities.

2.1.2 Observance of the safety instructions

No work must be performed on or with the EX control unit before the safety instructions contained in the Operating Instructions (Chapter 2) have been read and understood. The Operating Instructions are mandatory for all work – abridged instructions should only be used in the form of checklists.

The EX control unit has been inspected before being shipped and is delivered in perfect condition. TYROLIT Hydrostress AG does not accept any liability for damage caused by the failure to observe the instructions and information provided in the Operating Instructions. This applies in particular to:


- Damage caused by improper use and operator error.
- Damage caused by failure to observe safety-related information in the Operating Instructions or shown on the warning signs fitted to the machine.
- Damage caused by defective or absence of maintenance work.

Independently performed conversions and alterations may affect safety and are not permitted.

2.1.3 Use for intended application

The intended application is described in “Chapter 1” under 1.1.2,  1-2.

2.1.4 Observance of the information on workplace safety and danger area

The workplace and danger area are described in “Chapter 1” under 1.1.3,  1-2.

2.2 Safety principles

2.2.1 Delimitation of the safety concept

The EX control unit has no effect on the safety concept of the connected systems, apparatus and installations.

2.2.2 Safety elements

Protection from personal injury is based primarily on a safety concept and design safety.

2.2.2.1 Passive safety elements

Protection from live parts

All functional units that contain parts which carry hazardous voltages, are shock-protected by suitable covers.

2.2.3 Removing protective devices

Protective devices should only be removed when the device is turned off, disconnected from the mains and at a standstill. Safety components in particular should only be removed and refitted by authorised personnel, see "Chapter 2" 2.6.1, 2-7.

Before using the EX control unit again, the safety elements must be checked for correct operation.

2.2.4 Safety measures (organisational)

2.2.4.1 Product monitoring obligation

Operating personnel must notify changes in the operational behaviour or safety-related components to a responsible person or the manufacturer immediately.

2.2.4.2 Location of Operating Instructions

A copy of the Operating Instructions must be available at all times to staff at the place of use of the apparatus.

2.3 General safety rules

2.3.1 Statutory provisions

The generally applicable national and local safety and accident prevention provisions and the supplementary operator regulations must be followed and complied with.

2.3.2 Inspection and maintenance obligation

The operator is under an obligation to only use the EX control unit when it is in a perfect and undamaged condition. The maintenance intervals shown in the Operating Instructions must be adhered to without fail. Malfunctions and mechanical damage must be rectified without delay.

2.3.3 Spare parts

Only TYROLIT Hydrostress AG original spare parts should be used. Otherwise damage may be caused to the EX control unit or to other property and persons.

2.3.4 Power connections

The EX control unit must be connected and coupled in accordance with the Operating Instructions for this and the Operating Instructions for the other machinery used.

2.3.5 Modifications

No technical alterations should be made to the apparatus in the form of additions or conversions without the written consent of TYROLIT Hydrostress AG.

2.3.6 Safety instructions in the individual chapters

The chapters of these Operating Instructions contain additional safety instructions. These make reference to specific potential dangers (residual dangers). The instructions must be followed closely and require that the actions described are taken.

2.3.7 Safety clothing

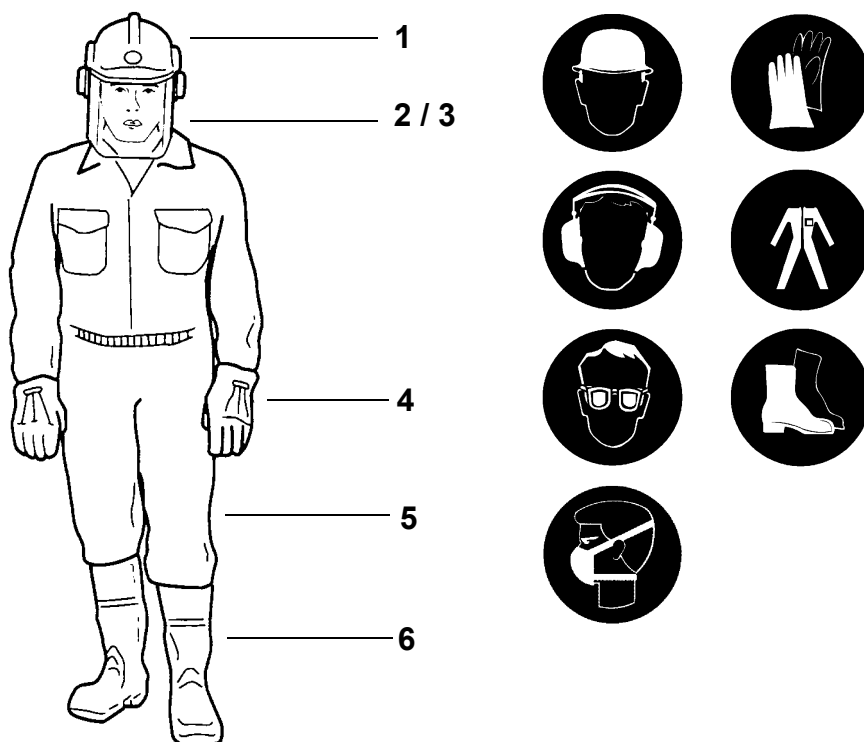


Fig. 2-1 Safety clothing

- 1. Helmet with ear protectors
- 2. Visor or goggles
- 3. Respiratory mask
- 4. Waterproof gloves
- 5. Waterproof, sturdy, comfortable clothing
- 6. Steel-capped work boots and anti-slip soles

Safety clothing must always be worn when drilling, sawing, nibbling or compressing concrete or stone in order to protect against the following dangers:

Sources of danger	Safety clothing
Falling parts	Helmet, steel-capped safety shoes
Moving, sharp-edged parts	Safety gloves
Flying pieces of concrete and stone, flying sparks	Goggle or helmet with visor
Slipping	Anti-slip shoes
Noise	Ear protectors
Contamination of respiratory tracts	Respiratory mask

2.4 Information and symbols

In these Operating Instructions information panels are used to draw attention to residual dangers and to point out important technical requirements.

2.4.1 Hazard symbols in the Operating Instructions



Danger
Warning of danger, where failure to comply could lead to death or serious injury.



Warning
Warning of danger, where failure to comply could lead to injury or damage to property.

Fig. 2-2 Danger and warning notices

2.4.2 Information symbol



Information
Text displayed in this way is practical information and is aimed at achieving optimum use of the installation or apparatus. Failure to take note of this information may mean that the performances shown in the technical data can no longer be guaranteed.

Fig. 2-3 Information notice

2.5 Generally applicable warnings of residual dangers

In the following warnings of residual dangers are shown that are generally applicable to all work (with and on the saw systems and during all phases of the life of the systems).



Danger

Electric shock due to defective electronic equipment.

The electrotechnical equipment must be checked prior to each use and from time to time during prolonged usage. Defective parts such as cables and plugs must be exchanged by electrotechnically trained personnel in the powered down state.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.

2.6 Responsibility

2.6.1 Authorised personnel

Work on or with TYROLIT Hydrostress AG machines or systems should only be performed by authorised personnel. Personnel are considered by TYROLIT Hydrostress AG to be authorised if they meet the necessary training and know-how requirements and they have been assigned a precise functional role.

The personnel qualifications for the corresponding work are contained in the introduction under "General" of the respective chapters.

2.6.2 Manufacturer

TYROLIT Hydrostress AG or a company expressly nominated by TYROLIT Hydrostress AG is deemed to be the manufacturer of the products supplied by TYROLIT Hydrostress AG. Within the context of an integrated quality and safety control system the manufacturer is entitled to request from the operator information on the products.

2.6.3 Operator

The operator named by TYROLIT Hydrostress AG is the primary, legal entity responsible for the correct use of the product and for the training and use of the authorised personnel. The operator sets out the mandatory skills and level of training of the authorised personnel for his company.

2.6.4 Operator (user)

User is the term employed by TYROLIT Hydrostress AG to designate a person who independently performs the following work:

- Sets up TYROLIT Hydrostress AG machines or systems for tasks according to the intended purpose.
- Performs tasks independently and monitors these.
- Locates malfunctions and initiates or performs troubleshooting.
- Carries out servicing and simple maintenance.
- Monitors the correct functioning of the safety devices.

2.6.5 Service engineers

Service engineer is a term used by TYROLIT Hydrostress AG to designate a person who independently performs the following work:

- Installs TYROLIT Hydrostress AG machines and systems and controls their correct application.
- Makes adjustments to machines and systems for which special access rights are required.
- Performs repairs, complex service work and maintenance work.

2.6.6 Qualification and training

2.6.6.1 Operator

- A technical trained person in a management position.
- Has extensive experience in personnel training and danger assessment.
- Has read and understood the “Safety instructions” chapter.

2.6.6.2 Operator

- Has completed concrete expert training or professional experience.
- Has received an introduction (basic training) to the operation of the EX control unit from a service engineer.
- Has read and understood Chapter 2 “Safety instructions”.

2.6.6.3 Service engineer

- Specialist professional training (mechanical / electrotechnical).
- Has attended specialist courses at TYROLIT Hydrostress AG.
- Has read and understood the “Safety instructions” chapter.

3 Design and function

3.1 Design

The EX control unit comprises the following components.

- EX control unit
- Remote controller EX

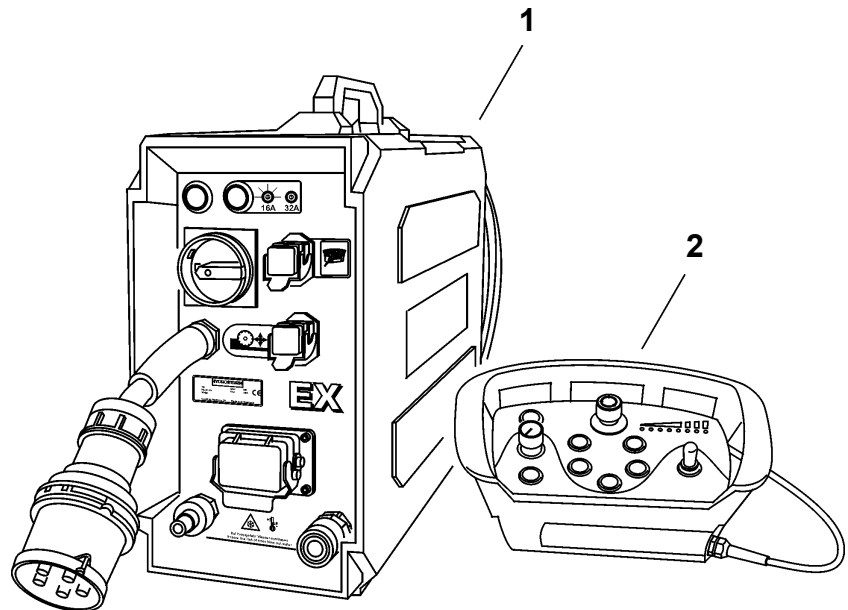


Fig. 3-1 Design EX control unit

- 1 EX control unit
- 2 Remote controller EX

3.2 Function

The EX control unit has been designed for the operation of units with a water connection, two electric feed motors and one electric main motor. The motors are connected with the control unit via flexible cables.

3.3 Components

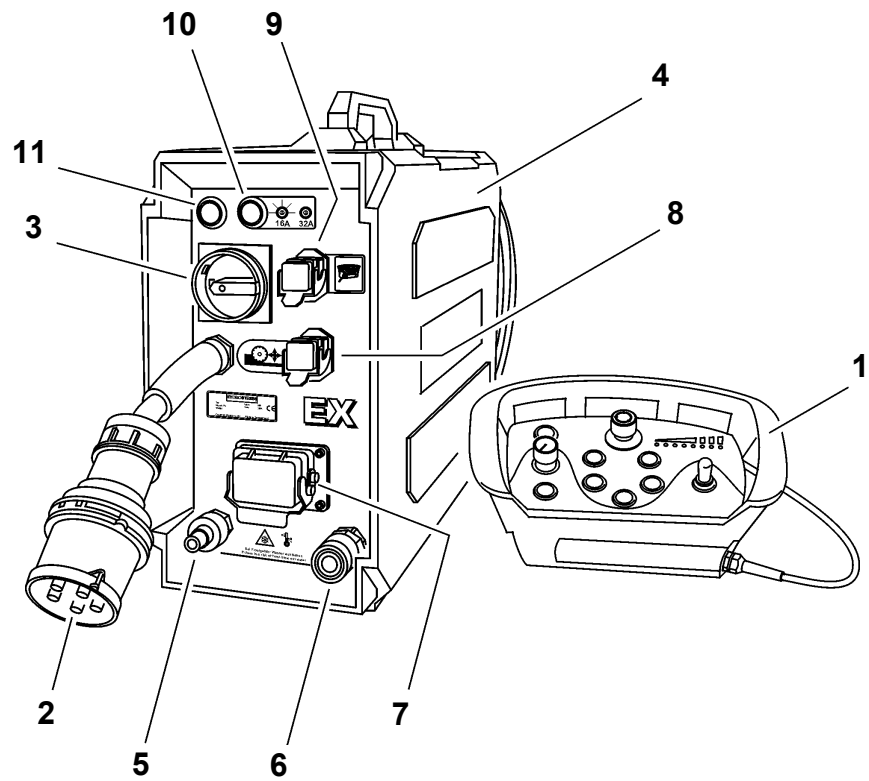


Fig. 3-2 Components

- | | |
|-------------------------------------|--|
| 1 Remote controller | 8 Connection coupling
Feed motor |
| 2 Mains connector | 9 Connection coupling
Remote controller |
| 3 Main switch | 10 Mains system selection button |
| 4 Housing with grip | 11 Reset button |
| 5 Water stem / Water inlet | |
| 6 Water coupling / Water outlet | |
| 7 Connection coupling
Main motor | |

3.4 Component description

3.4.1 Remote controller

Design

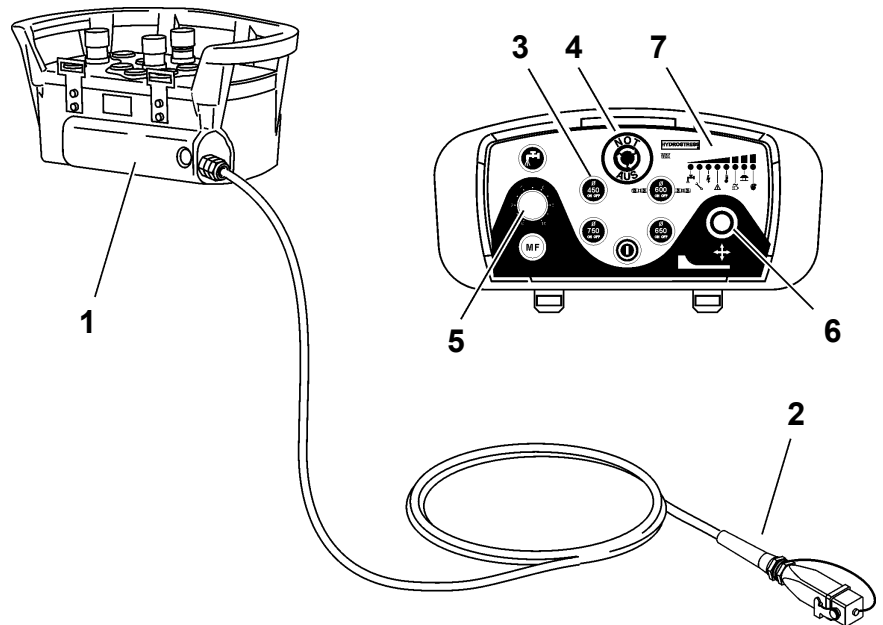


Fig. 3-3 Remote controller

The remote controller comprises the following components.

- Housing (1)
- Connecting cable with plug (2)
- Pushbuttons (3)
 - Diameter selection buttons
 - Cooling water button
 - MF button (multifunction button)
 - I/O button
- Emergency stop (4)
- “Feed motor” potentiometer (5)
- Joystick (6)
- Power and error message LEDs (7)
- Printed circuit board (not shown)
- Carrying strap (not shown)

Function

The remote controller allows a secure, simple and mobile method of working. The operator can at all times be in a position where he has a full view of the unit when in operation.



Information

All buttons have a light-emitting diode behind them and indicate their function. Detailed information on the individual functions and the signaling of these can be found in "Chapter 4" 4.3, 4-7.

3.4.2 Mains connector

Design

Mains connector CEE 32 / 5 pole

Function

The EX control unit is connected to the mains by means of the mains connector.

3.4.3 Main switch

Design

Rotary switch

Function

The main switch opens or closes the power circuit of the EX control unit.

3.4.4 Housing

Design

Portable, light construction, plastic housing with anchoring options and remote controller cable storage.

Function

The housing is used to transport and protect the controller components from impacts, splash water and sawing sludge.

3.4.5 Water stem

Design

Water stem

Function

The cooling water for the power semiconductors passes through the water stem and into the cooling channels of the EX control unit.

3.4.6 Water coupling

Design

Plug-in coupling

Function

Following cooling of the power semiconductors in the EX control unit the water is available for use by the electric motors and cutting tool cooling and can be connected via the water coupling.

3.4.7 Main motor connection coupling

Design

Plug-in coupling with protective cup

Function

The main motor is connected to the EX control unit and secured via the connection coupling.

3.4.8 Feed motor connection coupling

Design

Plug-in coupling with protective cup

Function

The feed motor(s) is (are) connected to the EX control unit and secured via the connection coupling.

3.4.9 Remote controller connection coupling

Design

Plug-in coupling with protective cup

Function

The remote controller is connected to the EX control unit and secured via the connection coupling.

3.4.10 Mains system selection button

Design

Pushbutton

Function



The mains system selection button is used to adjust the EX control unit to the mains supply. The EX control unit can be operated on both a 16 A and a 32 A mains system.

3.4.11 Reset button

Design

Pushbutton

Function

The reset button restores the electric control voltage following use of the Emergency Stop button or error messages (see "Chapter 4", 4.4,  4-9). For an example see: "Deactivating Emergency Stop" 4.3.1.1,  4-8.

3.5 Wiring diagram

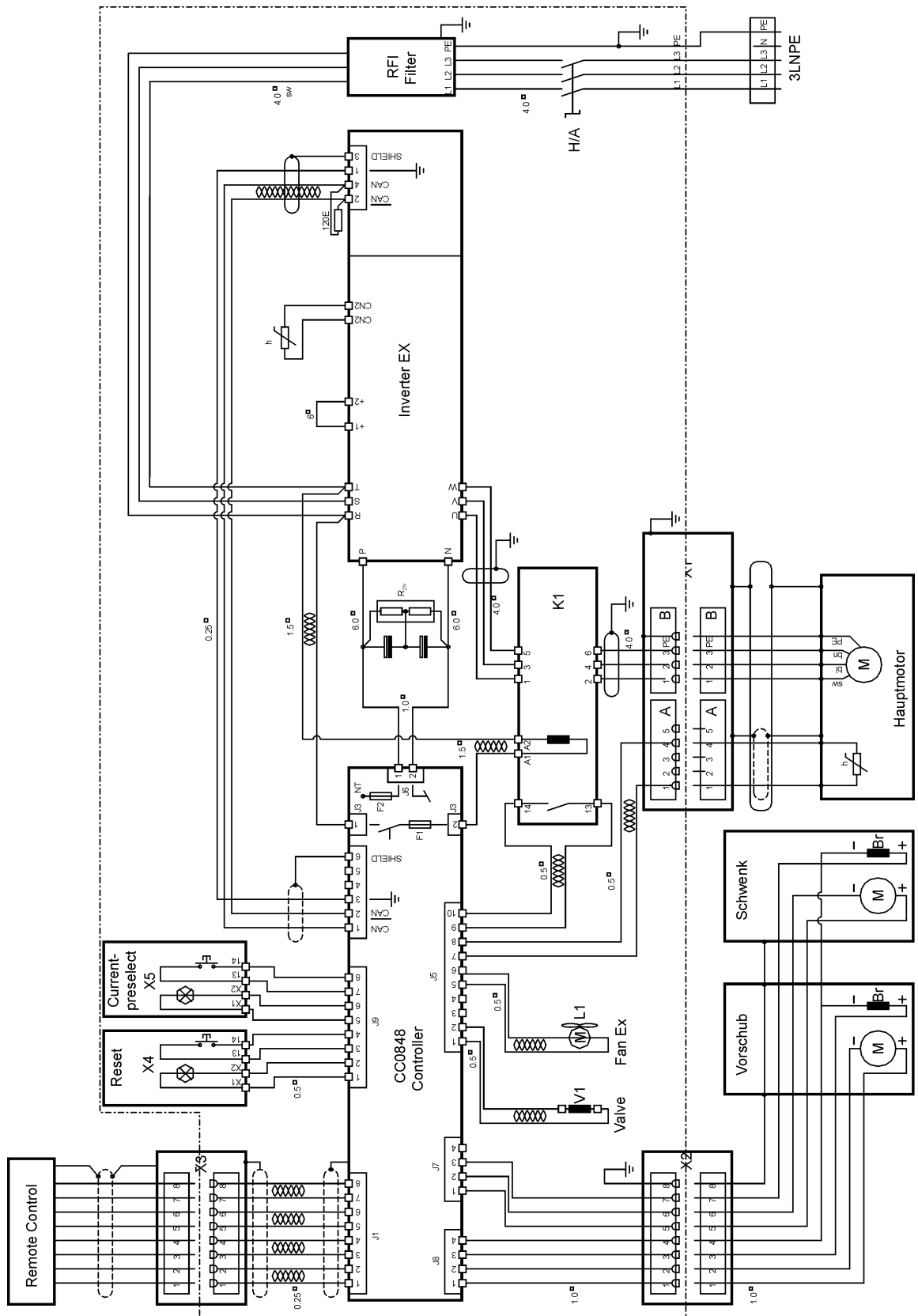


Fig. 3-4 Wiring diagram

4 Operating elements and displays

4.1 Operating elements of the EX control unit

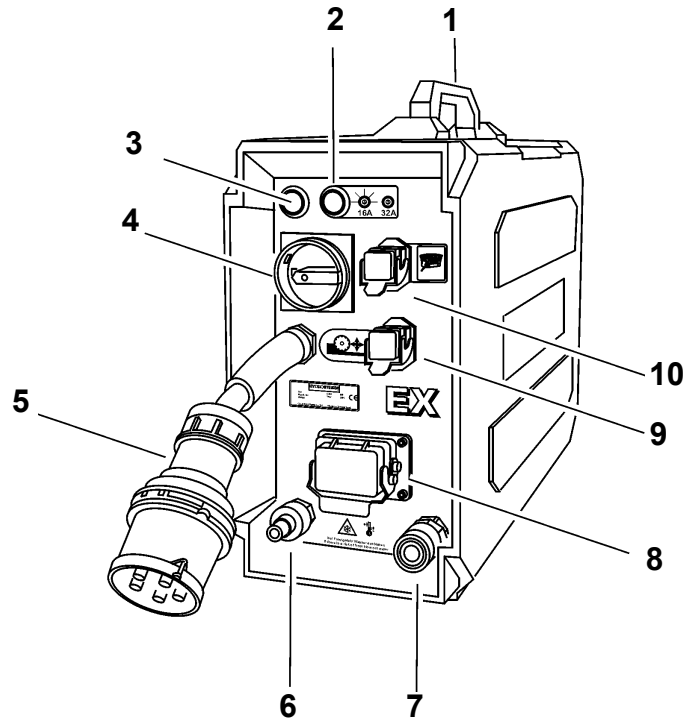



Fig. 4-1 Operating elements

- | | |
|---------------------------------|---|
| 1 Grip | 8 Connection coupling
Main motor |
| 2 Mains system selection button | 9 Connection coupling
Feed motor |
| 3 Reset button | 10 Connection coupling
Remote controller |
| 4 Main switch | |
| 5 Mains connector | |
| 6 Water stem | |
| 7 Water coupling | |

4.1.1 Grip

The housing incorporates a grip for transporting the EX control unit. Information on correct transport can be found in “Chapter 10” 10.1,  10-1.



4.1.2 Mains system selection button

The EX control unit is preset for the 16 A mains system and once the EX control unit has been started up this is indicated by the lighting up of the mains system selection button. Pressing the mains system selection button sets the EX control unit for the 32 A system and the light on the mains system selection button goes out.



Information	
	Switching the EX control unit from the 16 A mains system to the 32 A mains system is possible only once during the start-up phase (I/O button on the remote controller is flashing). To switch back to the 16 A mains system the EX control unit must be restarted using the main switch.

4.1.3 Reset button

Pressing the reset button restores the electric control voltage of the EX control unit following use of the Emergency Stop button or error messages, (see “Chapter 4”), 4.4,  4-9).
(For an example see 4.3.1.1,  4-8 “Deactivating Emergency Stop”).

4.1.4 Main switch

The main switch (rotary switch) opens (ON) or closes (OFF) the power circuit and is thus used to start and stop the EX control unit.

4.1.5 Mains connector


The EX control unit is connected to the mains system via the mains connector. Check that the power supply is earthed and fitted with a residual current circuit breaker.
If the EX control unit is supplied via an emergency power generating unit, it is essential that this unit is earthed.



Warning	
	There is a danger if the EX control unit is operated at different voltages.
	The mains voltage (including the frequency) must correspond to the mains setting on the EX control unit.
	Damage may be caused to the EX control unit if it is connected to different voltages and there is also a risk of fire and injury.

4.1.6 Water stem

The cooling water for the power semiconductors passes through the water nipple and into the cooling channels of the EX control unit.

For details on the water supply see "Chapter 1", 1.2.1.9,  1-6.

In order to connect water to the EX control unit, proceed as follows:

- Visual inspection
 - Before connecting check the water coupling and the feed line for cleanliness
 - Check the water coupling and feed line for damage
- Push the hose coupling onto the water stem until you hear it "click"

4.1.7 Water coupling

Once the power semiconductors in the EX control unit have cooled the water flows through the water coupling and the water feed line to the main motor and to the cutting tool.



Information

Since the power semiconductors of the EX control unit must always be cooled during operation, the water feed line from the EX control unit to the main motor must always be in place.

In order to set up the water feed line from the EX control unit to the electric motor, proceed as follows:

- Visual inspection
 - Before connecting check the water coupling and the feed line for cleanliness
 - Check the water coupling and feed line for damage
- Push the water stem of the water feed line onto the hose coupling of the EX control unit until you hear it "click"



Information

In order to avoid frost damage, if there is a danger of frost, the entire water system must be emptied and blown out on finishing work or prior to extended breaks in work.

4.1.8 Main motor connection coupling

In order to firmly attach the main motor cable to the EX control unit the cable connection is secured.

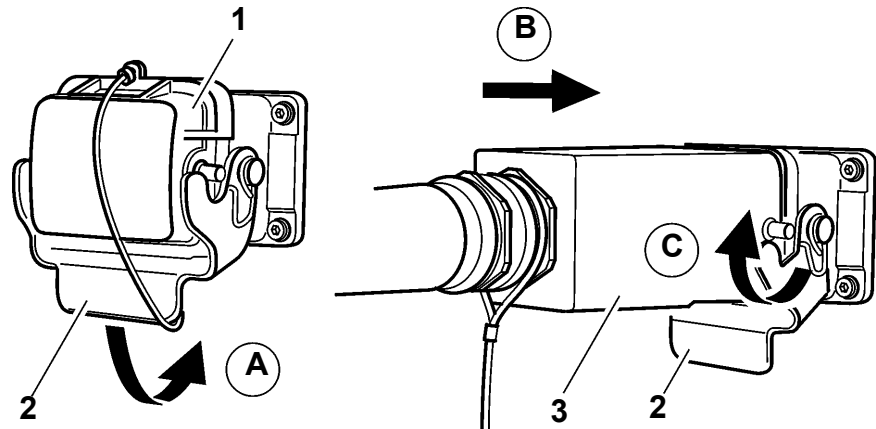


Fig. 4-2 Main motor connection coupling

- 1 Protective cup
 - 2 Locking plate
 - 3 Connector
- Main motor cable

Proceed as follows:

- Visual inspection
 - Before connecting check the coupling and the connector for cleanliness
 - Check the connecting cable for damage
- Step A
 - Remove the protective cup (1) by folding down the locking plate (2)
- Step B
 - Remove the protective cup from the connector (3) and push the connector of the main motor cable firmly into the coupling
- Step C
 - Secure the plug connector by means of the locking plate (2)

Danger



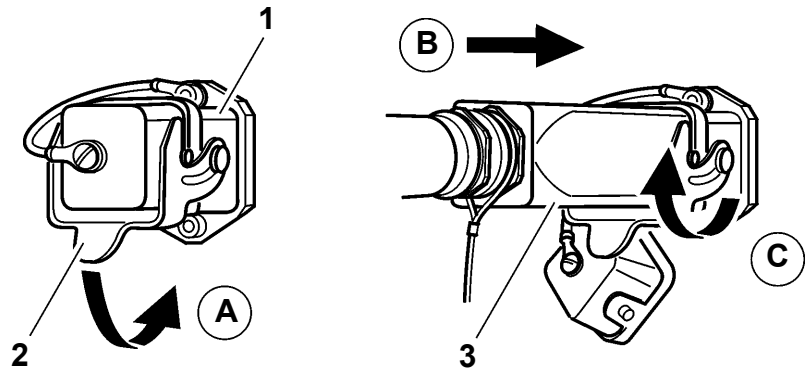
Danger from electric shock!

Never connect or disconnect cables when the EX control unit is running.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.

4.1.9 Feed motor / remote controller connection coupling

In order to firmly attach the feed motors and remote controller cable to the EX control unit the cable connection is secured.



Feed motor / remote controller connection coupling

- 1 Protective cup
 - 2 Locking plate
 - 3 Connector
- Feed motor / Remote controller

Proceed as follows:

- Visual inspection
 - Before connecting check the couplings and the connectors for cleanliness
 - Check the connecting cables for damage
- Step A
 - Remove the protective cups from the couplings (1) on the EX control unit by folding down the locking plate (2)
- Step B
 - Remove the protective cups on the connectors of the connecting cables (3) and push the connectors firmly into the appropriate coupling
- Step C
 - Secure the plug connector by means of the locking plate (2)

Danger

Danger from electric shock!

Never connect or disconnect cables when the EX control unit is running.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.



4.2 Displays on the EX control unit

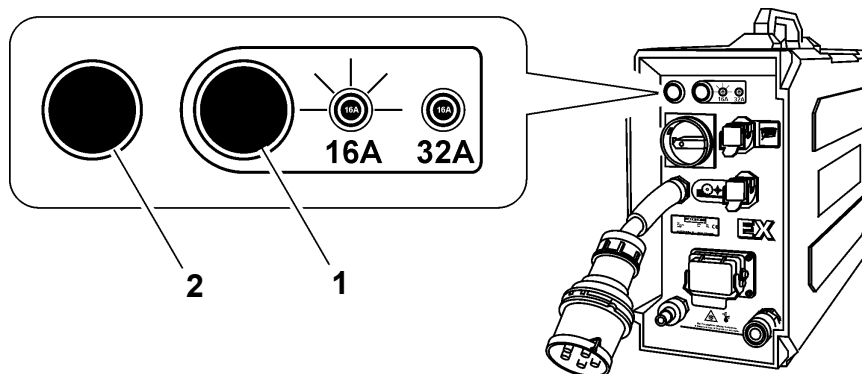




Fig. 4-3 Displays on the EX control unit

- 1 Mains system selection button
- 2 Reset button

4.2.1 Mains system selection button

As an additional aid, the mains system selection button is fitted with an LED. The lighting state of the button indicates to the operator the mains system for which the EX control unit has been set.

Switching between the 16 A mains system and the 32 A mains system is described in “Chapter 4”, 4.1.2, 4-2.

Symbol	Mains system	LED
	The EX control unit is set for the 16 A mains system.	The mains system button is lit.
	The EX control unit is set for the 32 A mains system.	The mains system button is unlit.

4.2.2 Reset button

The reset button of the EX control unit lights if the electrical control voltage is interrupted.

Pressing the reset button re-enables the electrical control voltage and the button becomes unlit. For further details on the reset button see “Chapter 4”, 4.1.3, 4-2.

4.3 Operating elements of the remote controller

The remote controller can be detached from the EX control unit by means of the plug connection. Information on coupling and securing the plug connector can be found in “Chapter 4”, 4.1.9, 4-5.

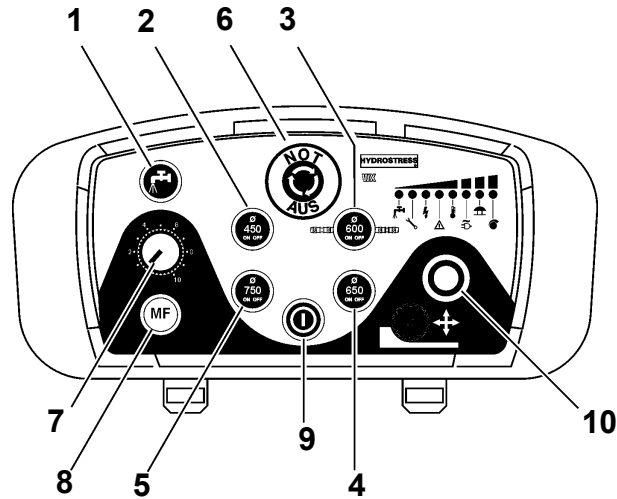


Fig. 4-4 Operating elements of the remote controller

- | | |
|-------------------------------|-------------------------------------|
| 1 Cooling water button | 7 Feed potentiometer |
| 2 Dia. 450mm selection button | 8 MF button (multi-function button) |
| 3 Dia. 600mm selection button | 9 I/O button |
| 4 Dia. 650mm selection button | 10 Joystick |
| 5 Dia. 750mm selection button | |
| 6 Emergency Stop | |



Warning

Warning concerning uncontrolled movements!

Never connect or disconnect cables when the EX control unit is running!

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.

4.3.1 Emergency Stop

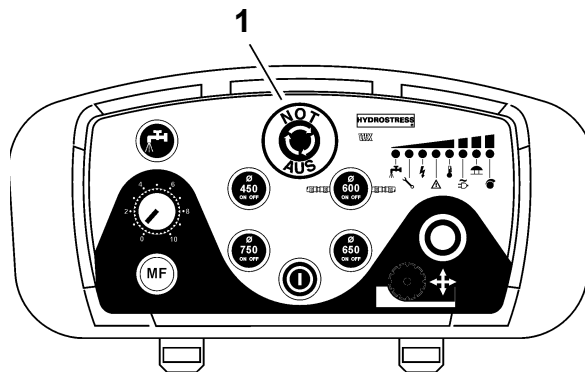


Fig. 4-5 Emergency Stop (1)

In danger situations the Emergency Stop pushbutton must be pressed immediately. Pressing the Emergency Stop pushbutton halts the system and prevents the system being accidentally switched on again. The Emergency Stop LED on the remote controller lights red.

4.3.1.1 Deactivating Emergency Stop (Restart)

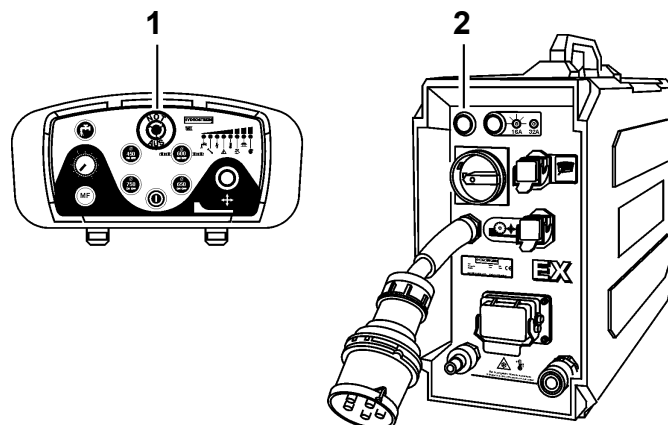


Fig. 4-6 Deactivating Emergency Stop

In order to be able to restart the EX control unit, the Emergency Stop must be reset.

Proceed as follows:

- Turn the Emergency Stop button clockwise (1)
 - The Emergency Stop LED on the remote controller goes out.
- Press the Reset button on the EX control unit (2)
 - The I/O button on the remote controller flashes
- Press the I/O button on the remote controller
 - I/O button lights
- Press the desired dia. selection button
 - Main motor starts

4.4 Displays on the remote controller

4.4.1 Power and error displays

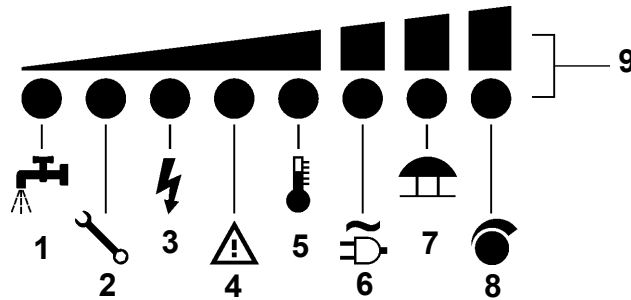
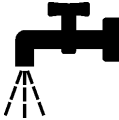










Fig. 4-7 Displays on the remote controller

- | | |
|----------------------------|---------------------------|
| 1 Cooling water symbol | 6. Mains connector symbol |
| 2 Service symbol | 7. Emergency stop symbol |
| 3 Electric symbol | 8. Potentiometer symbol |
| 4 Group alarm symbol | 9. Power display |
| 5 Motor temperature symbol | |

Power and error displays on the remote controller		
Display on the remote controller	Possible cause	Solution / Action
Cooling water lights red 	No water flow Information: The EX control unit can be started despite this information	The water flow is enabled by operating the water button
Service lights orange 	After 100 operating hours, then every 200 operating hours Information: The EX control unit can be started despite this information	Only to be carried out by TYROLIT Hydrostress AG or an authorised representative
Electrical fault (external) lights red 	Fault - Current surge - Short circuit - Main motor earth fault - Main motor overload Information: The EX control unit cannot be started	Inform the after-sales service TYROLIT Hydrostress AG

Power and error displays on the remote controller		
Display on the remote controller	Possible cause	Solution / Action
Electrical fault (internal) lights red 	Faulty - Main contactor - Emergency Stop - Frequency converter - Can fault - Group fault Information: The EX control unit cannot be started	Inform the after-sales service TYROLIT Hydrostress AG
Temperature lights red 	Overheating of - Heat sink - Environment - Main motor - Frequency converter Information: The EX control unit cannot be started	Check cooling. Wait until a restart is possible. Press reset button before starting.
Mains connector lights red 	Phase missing Information: The EX control unit cannot be started	Check / insert mains fuse in distribution box Have the site power supply checked by site electrician Check extension cable and plug / socket for faults, eliminate loose contacts
Emergency Stop lights red 	Emergency Stop pressed Information: The EX control unit cannot be started	Resetting Emergency Stop, see "Chapter 4" 4.3.1.1, 4-8
Potentiometer lights red 	Potentiometer is not in the OFF position Information: The EX control unit cannot be started	Turn the rotary switch of the potentiometer to the OFF position
Power display 	Information: The power display indicates the power range in which the EX control unit is currently working. The ideal power range is at the last green and the first orange diode.	

5 Putting into operation

The EX control unit is supplied ready for use. The information provided in “Chapter 6”, Operation, also applies to the putting into operation of your apparatus.

6 Operation

6.1 General

Before proceeding read Chapter 2 "Safety instructions", 2-1 in these Operating Instructions. Be sure also to take note of all the danger information given here and follow the instructions on how to avoid physical injury and damage to property.

6.1.1 Safety instructions

It is essential to observe the following safety instructions, in particular in relation to the operation of the EX.



Danger

Danger of falling heavy parts!

When performing the types of work described in this chapter, it is essential to wear the following individual protective equipment: helmet, goggles, protective gloves and safety shoes. (See "Chapter 2" 2.3.7, 2-4)

It is essential that the work instructions and procedures described in this safety manual are followed.

Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.



Danger

Danger from machine suddenly starting up!

Before switching on the EX control unit the operator must ensure that no other person is present in the danger areas.

Failure to adhere to this regulation may result in cut wounds to body parts and damage to property.

Danger

Noise danger!

When using the EX control unit hearing protection must be worn.

If this instruction is not followed irreparable hearing damage may result.

Danger

Danger of the EX control unit restarting in the event of an accident!

Make sure you know how to stop the EX control unit quickly in case of emergency. See Emergency Stop, "Chapter 4" 4.3.1, 4-8.

Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.

Warning

Warning of slippery floors!

The water feed and abrasion can make standing surfaces smooth and slippery. You should therefore always ensure you have a firm footing.

Failure to adhere to this regulation may result in slight or serious physical injury.

Warning

Warning against working when not in a fit state to do so!

Do not use the EX control unit if you are under the influence of sedatives or alcohol or if you are overtired.

Failure to adhere to this regulation may result in slight or serious physical injury.

6.1.2 Personnel qualifications

The EX control unit should not be operated by unauthorised personnel. Personnel are only authorised where they meet the following requirements.

- Have completed concrete expert training or professional experience.
- Have received an introduction (basic training) to the operation of the EX control unit from a service engineer.
- Have read and understood Chapter 2 “Safety instructions”.

6.2 System requirements

Warning




There is a danger if the EX control unit is operated at different voltages.

The mains voltage (including the frequency) must correspond to the mains setting on the EX control unit.

Damage may be caused to the EX control unit if it is connected to different voltages and there is also a risk of fire and injury.

6.2.1 Connectable equipment

Information on connectable equipment and the intended application can be found in “Chapter 1”, 1.1.2,  1-2.



Information

To find out how to expand your EX control unit with appropriate units to create an electric wall saw or diamond wire saw that provides optimum performance, please talk to TYROLIT Hydrostress AG.

6.3 Preparatory operations

6.3.1 Visual inspection

Before starting work always complete the following visual inspections:

- Is the EX control unit located outside the danger area?
- Is the power supply of the EX control unit earthed and fitted with a residual current circuit breaker?
(If the EX control unit is supplied via an emergency power generating unit, it is essential that this unit is earthed).
- Does the mains voltage match the setting on the EX control unit?
- Is the cable section 5x4mm² (25m and above 5x6mm²)?
- Is the water properly connected to the EX control unit?



Information

Ensure that the water supply is not interrupted during working.

- Is the remote controller connected?
- Is there any damage to the cable or plugs?
- Has the Emergency Stop been reset?

6.4 Working with the EX control unit

Following the preparatory operations (see “Chapter 6”, 6.3, 6-4) the EX control unit is ready for use.

6.4.1 Starting the EX control unit



Information

The EX control unit should only be switched on when level and upright. If the surface has an incline, secure the EX control unit against slipping away and overturning.

Proceed as follows:

- Connect the following system supply lines to the EX control unit:
 - Water see “Chapter 4” 4.1.7, 4-3
 - Main motor see “Chapter 4” 4.1.8, 4-4
 - Feed motor see “Chapter 4” 4.1.9, 4-5
 - Remote controller see “Chapter 4” 4.1.9, 4-5
- Connect the EX control unit to the water supply, see “Chapter 4” 4.1.6, 4-3
- Connect the EX control unit to the mains system, see “Chapter 4” 4.1.5, 4-2
- Turn the feed potentiometer on the remote controller to the 0 position
 - If the feed potentiometer is not in the 0 position, the potentiometer LED on the remote controller lights red once the EX control unit is switched on
- Turn the main switch on the EX control unit to ON
 - All fault indication diodes on the remote controller light briefly.
 - The I/O button on the remote controller flashes
- Press the I/O button on the remote controller
 - I/O button lights
- Move the system into the start position using the joystick (direction of travel) and feed potentiometer (speed of travel)
- Press the cooling water button on the remote controller
 - Cooling water button lights
- Open the water valve on the system supply line
 - Water emerges from the cutting tool
- Press the desired dia. selection button, see 6.4.2, 6-6

6.4.2 Select dia. selection button

Once the EX control unit has been started properly, you can select the power stage using the dia. selection button.

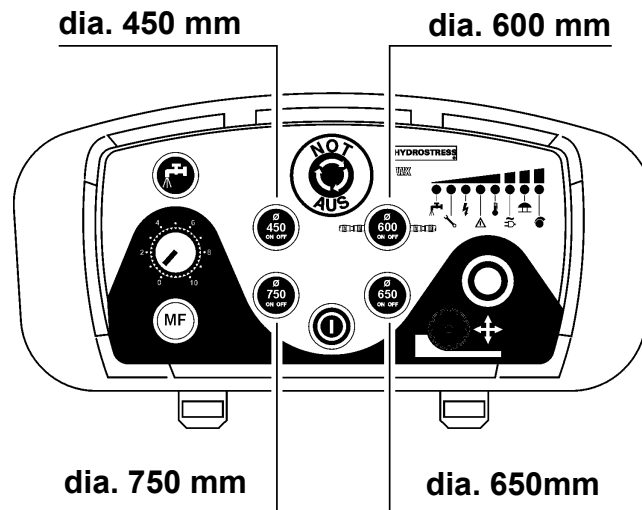


Fig. 6-1 Selecting the power stage

Proceed as follows

- On the remote controller press the appropriate dia. selection button, as you would on your cutting tool.
 - Dia. selection button lights
 - Cutting tool rotates



Information

To achieve optimum tool speeds, the ratings of the devices connected must be taken into account.

6.4.3 Power control

6.4.3.1 Power control – Feed motor

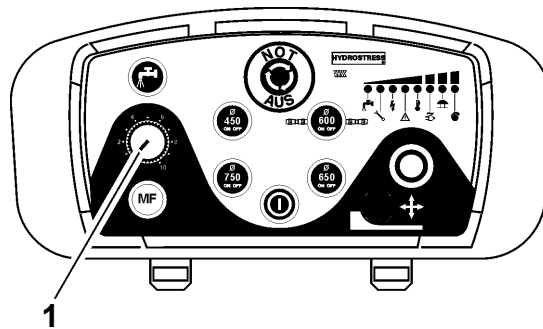


Fig. 6-2 Potentiometer (1)

The feed speed can be manually adjusted using the feed potentiometer on the remote controller.

6.4.4 Assisted feed

Assisted feed means an active power adjustment of the feed.



Information	
	When the EX control unit is started for the first time the assisted feed is always activated. The potentiometer LED on the remote controller flashes green.

In order to deactivate the assisted feed, proceed as follows:


- Once you have correctly started up the EX control unit, press the MF button for 3 seconds
 - Potentiometer LED goes out
- Set the feed speed manually using the feed potentiometer




Information	
	In order to reactivate the assisted feed, press the MF button again for 3 seconds; the potentiometer LED then flashes green.

6.4.5 Feed direction change

If the feed direction does not correspond with the direction of movement of the joystick, the feed direction can be changed.

A precondition for a change of feed direction is a correctly started EX control unit, see “Chapter 6”, 6.4.1,  6-5.

Proceed as follows

- Press the I/O button on the remote controller
 - I/O button flashes
- Keep the MF button pressed and in addition push the joystick into the right or left feed position.
- Releasing the MF button and the joystick changes the feed direction.
- Press the I/O button
 - I/O button lights
- Press the desired dia. selection button, see “Chapter 6” 6.4.2,  6-6

6.4.6 Feed fix

So that the joystick does not have to be held in position during the travelling motion, the feed can be fixed.

Proceed as follows

- Press the joystick in the desired direction of travel and at the same time press the MF button
- Releasing the joystick and the MF button fixes the feed
 - MF button flashes




Information

In order to release the feed fix move the joystick slightly in any direction.

6.4.7 Terminating the work

Once the work is complete, the EX control unit must be stopped.

Proceed as follows

- Switch off the cutting tool by pressing the dia. selection button on the remote controller
 - The dia. selection button goes out
- Switch off the EX control unit by pressing the I/O button on the remote controller
 - I/O button flashes
- Press the cooling water button on the remote controller
 - Cooling water button goes out
 - Cooling water LED on the remote controller lights red
 - no water at cutting tool
- Close the water valve on the water feed line
- If there is a risk of frost, blow out water, see “Chapter 7” 7.2.1,  7-3
- Turn the main switch of the EX control unit to OFF



Information

Only shut down the EX control unit using the Emergency Stop in a genuine emergency.

6.5 After the work

Proceed as follows:

- Unplug mains
- Uncouple the water supply and water feed line from the EX control unit
- Uncouple the electric cable and close it off with the protective cover
- Close off the couplings on the EX control unit with protective cover
- Clean the EX control unit




Information

The EX control unit and the remote controller should not be cleaned with pressurised water systems. Before cleaning ensure that all sealing and protective covers are mounted.



Information

In order to avoid frost damage, if there is a danger of frost, the entire water system must be emptied and blown out on finishing work or prior to extended breaks in work. See “Chapter 7” 7.2.1,  7-3

7 Maintenance

7.1 General

Before proceeding read Chapter 2 “Safety instructions”, 2-1 in these Operating Instructions. Be sure also to take note of all the danger information given here and follow the instructions on how to avoid physical injury and damage to property.

7.1.1 Safety instructions

It is essential to observe the following safety instructions, in particular in relation to the maintenance of the EX control unit.



Danger

Danger from electric shock!

Work on electrical systems should only be performed by authorised personnel and with the EX control unit disconnected from the mains and with the main switch switched off.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.



Warning

Danger from uncontrolled movements!

Never connect or disconnect cables when the EX control unit is running.

Failure to adhere to this regulation may result in cut wounds or injury to body parts and damage to property.

7.1.2 Personnel qualifications

The EX control unit should not be maintained by unauthorised persons. Personnel are only authorised where they meet the following requirements.

- Have completed the specialist professional training (mechanical / electrotechnical).
- Have received an introduction (basic training) to the operation of the EX control unit from a service engineer.
- Have read and understood Chapter 2 “Safety instructions”.

7.2 Maintenance and servicing table

The following maintenance work must be performed according to the prescribed cycles. Wear parts that are not subject to particular maintenance intervals should also be checked regularly for wear and adjusted or exchanged as necessary.

Maintain the system within the indicated intervals in order to ensure:

- Safety for the user
- Optimum performance
- Optimum reliability at all times

		Before each putting into operation	Upon completion of work	Weekly	Annually	In the event of malfunction	In the event of damage
Electrical system	Inspection Electric cables, connectors, switches (condition / cleanliness)	X	X			X	X
	Inspection Couplings (condition / cleanliness)	X	X			X	X
Water economy	Water line (tightness / cleanliness)	X	X			X	X
	If there is a risk of frost blow out water, see 7.2.1, 7-3		X				
Major service First service after 100 operating hours After every 200 operating hours thereafter	May only be carried out by TYROLIT Hydrostress AG or an authorised representative						

7.2.1 Blow out water

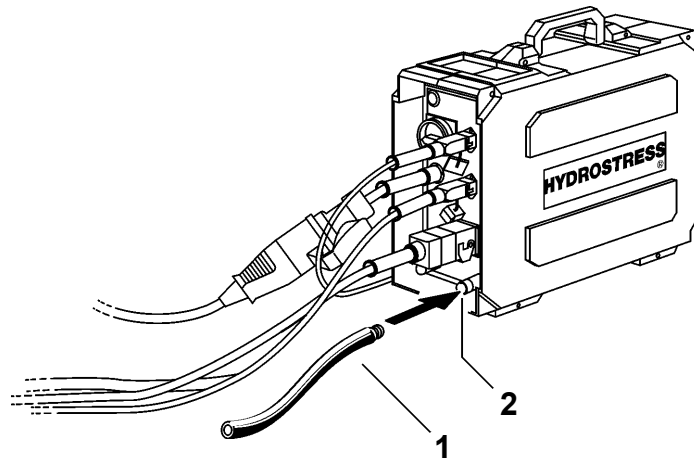


Fig. 7-1 Blow out water



Information

In order to avoid damage from frost-cracks, if there is a risk of frost or before shutting down for long periods the cooling water should be blown out of the EX control unit. Blowing out water should be performed as part of end of work operations, see “Chapter 6”, 6.4.7, 6-9.

Proceed as follows

- Uncouple the water supply and water feed line from the EX control unit
- Couple the blow out hose (1) to the water coupling (2) of the EX control unit
- Press the cooling water button on the remote controller
 - Cooling water button lights
 - The water valve in the EX control unit opens
- Blow out the cooling channels of the EX control unit
- Turn the main switch to OFF
- Unplug the mains connector
- Uncouple the blow out hose
- Uncouple the electric cable and close off the connectors with the protective covers
- Close off the couplings on the EX control unit with the protective covers
- Clean the EX control unit, see “Chapter 6”, 6.5, 6-10.

7.3 Warranty

TYROLIT Hydrostress AG warrants that the system supplied is free from material and manufacturing defects. This warranty is subject to the system being used and handled in accordance with the **TYROLIT Hydrostress AG** Operating Instructions, all warranty claims being made within 12 months of the purchase date (invoice date) and the technical unit being protected, i.e. only original **TYROLIT Hydrostress AG** consumables, accessories and spares being used with the system.

This warranty covers the free of charge repair or free of charge replacement of defective parts. Parts that are normally subject to wear and tear are not covered by this warranty.

Any further claims are excluded, except where this would violate mandatory national regulations. In particular, TYROLIT Hydrostress AG shall not be liable for direct or indirect damage or consequential damage or losses or costs associated with the use of your TYROLIT Hydrostress AG system. Furthermore, the TYROLIT Hydrostress AG warranty shall not apply in the event of use of your system other than for its intended purpose. The warranty shall lapse immediately if the product or its components are converted, changed or in any other way altered. Tacit assurances concerning the use or suitability for a particular purpose are expressly excluded.

The system and/or any affected part(s) must be sent immediately if a defect is discovered to **TYROLIT Hydrostress AG** or a local authorised **TYROLIT Hydrostress AG** branch office.

This warranty incorporates all warranty obligations of **TYROLIT Hydrostress AG** and replaces all earlier or simultaneous declarations, written or verbal agreements concerning warranties.

8 Servicing

8.1 General

Before proceeding read Chapter 2 "Safety instructions", 2-1 in these Operating Instructions. Be sure also to take note of all the danger information given here and follow the instructions on how to avoid physical injury and damage to property.

8.1.1 Safety instructions

It is essential to observe the following safety instructions, in particular in relation to the servicing of the EX control unit.



Danger

Danger from electric shock!

Work on electrical systems should only be performed by authorised personnel and with the EX control unit disconnected from the mains and with the main switch switched off.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.



Warning

Danger from uncontrolled movements!

Never connect or disconnect cables when the EX control unit is running.

Failure to adhere to this regulation may result in cut wounds or injury to body parts and damage to property.

8.1.2 Personnel qualifications

The EX control unit should not be serviced by unauthorised persons. Personnel are only authorised where they meet the following requirements:

- Have completed the specialist professional training (mechanical / electrotechnical).
- Have received an introduction (basic training) to the operation of the EX control unit from a service engineer.

Have read and understood Chapter 2 "Safety instructions".

8.2 Troubleshooting

Proceed systematically when looking for the causes of a fault.

The following table will help you to narrow down and rectify the source of the fault.

Fault	Possible cause	Solution
EX control unit does not run although the mains cable is connected	EX control unit is switched off	Switch on the EX control unit
	Emergency stop has been activated	Release Emergency Stop, see "Chapter 4" 4.3.1, ¶ 4-8
	There is no voltage at the EX control unit because:	
	Mains cable is defective	Replace the mains cable
	There is no voltage in power supply (at the building site)	Check power supply
	Power supply phases incorrectly connected	Check power supply
	Phase missing	See error message, "Chapter 4" 4.4.1, ¶ 4-9
	Feed potentiometer is not in the OFF position	see error message, "Chapter 4" 4.4.1, ¶ 4-9
The EX control unit starts and then switches off again	Power supply fuse at the building site trips	- Protection too weak - Change power supply
No power, though the EX control unit is running	Incorrect voltage	The settings of the EX control unit must correspond to the mains values (voltage and frequency)
The EX control unit stops suddenly	The power supply is interrupted, because of...	Check power supply
	... undervoltage in power supply	Check power supply
	... overvoltage in power supply	Check power supply
	... cross section of the power cable is too small	Use mains cable with correct cross section, see "Chapter 6" 6.3, ¶ 6-4
	... defective plug connection	Check plug connection, check power supply
Main motor is not running	Defective remote controller	Inform after-sales service TYROLIT Hydrostress AG
	Cable for the remote controller is faulty	Inform after-sales service TYROLIT Hydrostress AG
	Emergency stop has been activated	Release emergency Stop, see "Chapter 4" 4.3.1.1, ¶ 4-8
	Overheating	- Check water circuit - Check plug-in couplings

Fault	Possible cause	Solution
Remote controller does not function	Defective cable	- Use the continuity tester - Replace cable
Pulse buttons do not function	Defective remote controller PCB	Inform after-sales service TYROLIT Hydrostress AG
Pulse buttons do not light	Defective lights	Inform after-sales service TYROLIT Hydrostress AG
Potentiometer does not function	Defective potentiometer in the remote controller	Inform after-sales service TYROLIT Hydrostress AG
Feed motor does not generate any power	Defective potentiometer	Inform after-sales service TYROLIT Hydrostress AG
	Defective cable	Inform after-sales service TYROLIT Hydrostress AG
No water emerging	Water line is blocked	Clean water line
	Water valve on feed line is closed	Open water valve
	Insufficient water pressure	Ensure a minimum water pressure of 1 bar / 6 l/min
	Water valve in the EX control unit is defective	Inform after-sales service TYROLIT Hydrostress AG
	Pulse button in the EX control unit is defective	Inform after-sales service TYROLIT Hydrostress AG
Error messages on the remote controller	See error message table, "Chapter 4" 4.4, 4-9	See error message table, "Chapter 4" 4.4, 4-9

i**Information**

Further information on troubleshooting can be found in the Safety Manuals and System Descriptions of the machines used.

If you are unable to remedy a fault, please call our service centre (see manufacturer's address on the reverse of the title page).

To guarantee a rapid and professional solution to the problem, it is important that you have prepared as follows before calling:

- Try to describe the fault as accurately as possible
- Note the type and index of your unit (name plate)
- Have the Operating Instructions close to hand

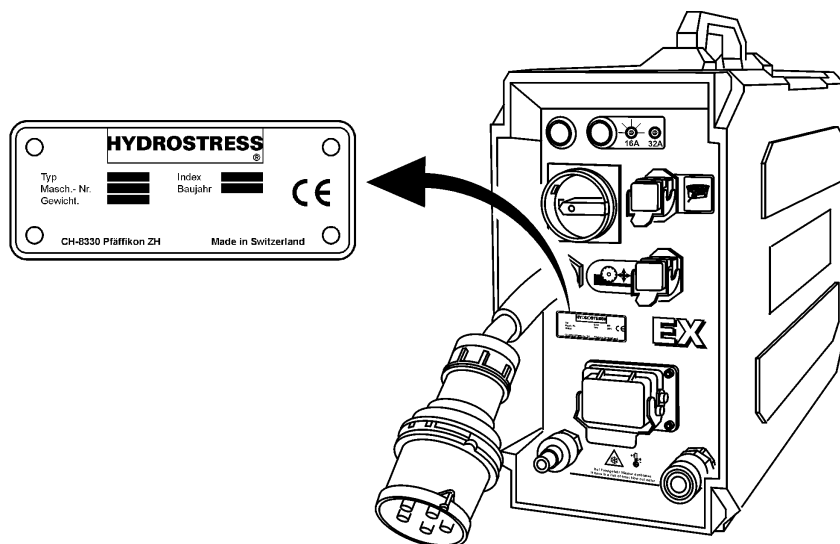


Fig. 8-1 Name plate

9 Taking out of service and storage

9.1 Taking out of service

9.2 General

Before proceeding read Chapter 2 “Safety instructions”, 2-1 in these Operating Instructions. Be sure also to take note of all the danger information given here and follow the instructions on how to avoid physical injury and damage to property.

9.2.1 Safety instructions

It is essential to observe the following safety instructions, in particular in relation to the taking out of service of the EX control unit.



Danger

Danger from electric shock!

Work on electrical systems should only be performed by authorised personnel and with the EX control unit disconnected from the mains and with the main switch switched off.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.



Warning

Danger from uncontrolled movements!

Never connect or disconnect cables when the EX control unit is running.

Failure to adhere to this regulation may result in cut wounds or injury to body parts and damage to property.

9.2.2 Personnel qualifications

The EX control unit should not be taken out of service by unauthorised persons. Personnel are only authorised where they meet the following requirements:

- Have completed concrete expert training or professional experience.
- Have received an introduction (basic training) to the operation of the EX control unit from a service engineer.
- Have read and understood Chapter 2 “Safety instructions”

9.3 Storage

Some components of the EX control unit consist of materials which may corrode. If the EX control unit is not used for lengthy periods, take the following action:

- Blow the water out of the water lines
- Store in a dry location

10 Transport, Packing

10.1 Transport

The EX control unit is a high-tech apparatus. When transporting it, be sure to observe the following:

- Clamp the remote controller to the plastic housing of the EX control unit using the clamping plate and wind the remote controller cable onto the cable store.
- Do not place any foreign bodies against or on the EX control unit
- Protect the EX control unit from impacts

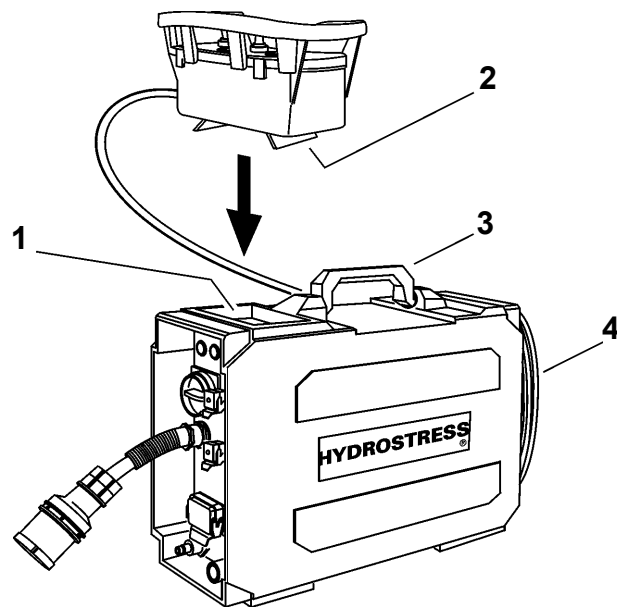


Fig. 10-1 Transport

- 1 Remote controller seat
- 2 Clamping plate
- 3 Grip
- 4 Cable store



Information

Always hold the grip firmly in the hand when transporting the EX control unit. Thumbs and fingers must be closed around the grip. Ensure that the transport grip is always clean and dry.

11 Disposal

11.1 General

The operator can recycle or dispose of the EX control unit himself provided he observes the statutory provisions. In order to dismantle the apparatus correctly and to properly remove the materials some knowledge in the area of mechanics and knowledge about differentiation of waste materials is necessary.

Before proceeding read Chapter 2 "Safety instructions", § 2-1 in these Operating Instructions. Be sure also to take note of all the danger information given here and follow the instructions on how to avoid physical injury and damage to property.

11.1.1 Safety instructions

It is essential to observe the following safety instructions, in particular in relation to the disposal of the EX.



Danger

Danger of falling heavy parts!

When performing the types of work described in this chapter, it is essential to wear the following individual protective equipment: helmet, goggles, protective gloves and safety shoes.
(See "Chapter 2" 2.3.7, § 2-4)

It is essential that the work instructions and procedures described in this safety manual are followed.

Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.

11.1.2 Personnel qualifications

Personnel performing the work described in this chapter must meet the following conditions:

- Have read and understood the Safety instructions in Chapter 2.
- Have completed their technical training (mechanical / electrotechnical) and are in a position to identify the various material groups.

11.2 Disposal regulations

The normal local and regional rules and guidelines must be observed when disposing of the EX control unit.

11.3 Disposal of the EX control unit

To allow proper disposal the components of the EX must be dismantled. This is performed by the client's personnel.

The dismantled parts of the apparatus are sorted by material and sent separately to the appropriate collection points. Ensure that the following parts in particular are properly disposed of.

The EX control unit consists of the following materials:

Cast aluminium	Rolled aluminium products
Bronze	Steel
Rubber	Electrical components

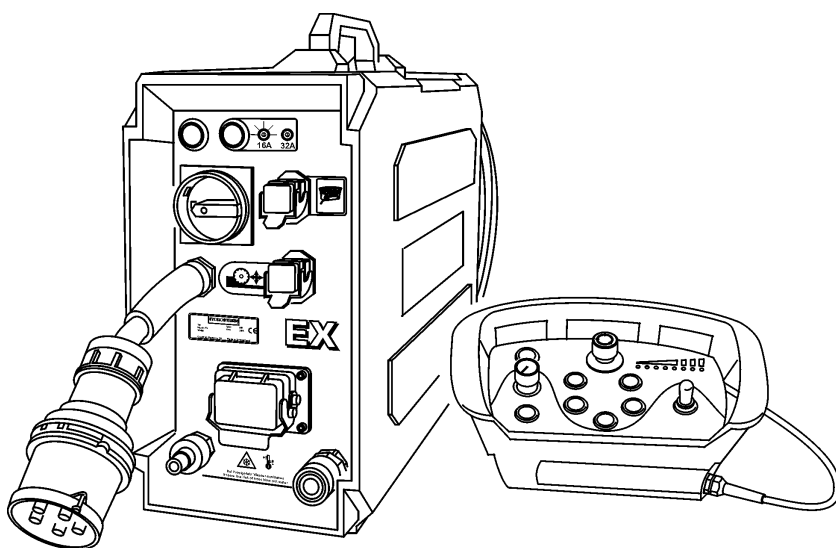
Ersatzteilliste

Spare Parts List / Liste des pièces détachées / Lista di parti di ricambio

Steuerung EX

Control unit EX / Commande EX / Comando EX

Index / Indice 000



Verwendung der Ersatzteilliste

Die Ersatzteilliste ist keine Montage- oder Demontageanleitung. Diese Ersatzteilliste dient ausschliesslich zum einfachen und schnellen Finden von Ersatzteilen, die bei der untenstehenden Adresse bestellt werden können.

Sicherheitsvorschrift



Gefahr

Montieren oder demontieren von Baugruppen kann Risiken bergen, auf die in dieser Ersatzteilliste nicht hingewiesen wird.

Das Verwenden dieser Ersatzteilliste für Montage- oder Demontagezwecke ist strikte verboten. Für Montage- und Demontearbeiten sind ausschliesslich die entsprechenden Beschreibungen in der Betriebsanleitung zu befolgen.

Nichtbeachten dieser Vorschrift kann zu Verletzungen führen, die im schlimmsten Fall auch den Tod zur Folge haben könnten.

Bestellungen



Information

Um Falschlieferungen zu vermeiden sollten vor der Versendung die Angaben in der Bestellung auf Richtigkeit und Vollständigkeit (siehe unter Bestellangaben) überprüft werden.

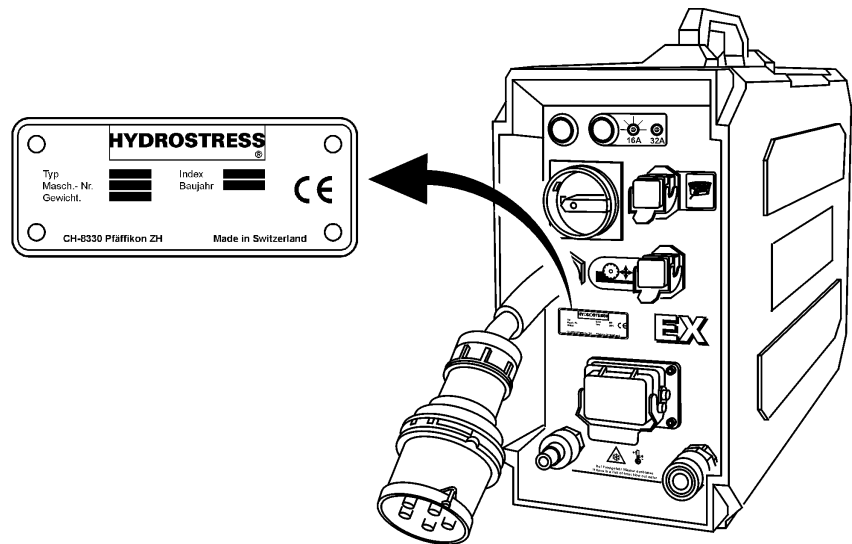
Es ist auch darauf zu achten, dass die Lieferadresse vollständig angegeben ist.

Bestelladresse:

TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Telefon 0041 (0)44 952 18 18
Telefax 0041 (0)44 952 18 00
www.tyrolit.com

0 Ersatzteilliste

0.1 Bestellangaben



Bei Bestellungen von Ersatzteilen benötigen wir folgende Angaben:

- Maschinentyp gemäss Typenschild (z.B. EX)
- Maschinennummer gemäss Typenschild (z.B. 10979712)
- Maschinenindex gemäss Typenschild (z.B. 000)
- Ersatzteilnummer gemäss Ersatzteilliste (z.B. 10979676)

Für Bestellungen, Fragen und Informationen wenden Sie sich bitte an die zuständige Niederlassung.

How to use the spare parts list

The spare parts list is not intended as instructions for assembly or dismantling work. It is exclusively intended to help you to quickly and easily find spare parts, which can then be ordered at the address below.

Safety regulations



Danger

The assembling or dismantling of modules can involve risks which are not identified in this spare parts list.

The use of this spare parts list for assembly or dismantling purposes is strictly forbidden. For assembly or dismantling tasks it is essential to only follow the corresponding descriptions in the operating manual.

If this regulation is not heeded injuries may be incurred which in the worst case can also be fatal.

Ordering



Information

To avoid incorrect deliveries you should check the order details for correctness and completeness (see under ordering details) prior shipment.

You should ensure that the delivery address is given in full.

Order address:

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Switzerland

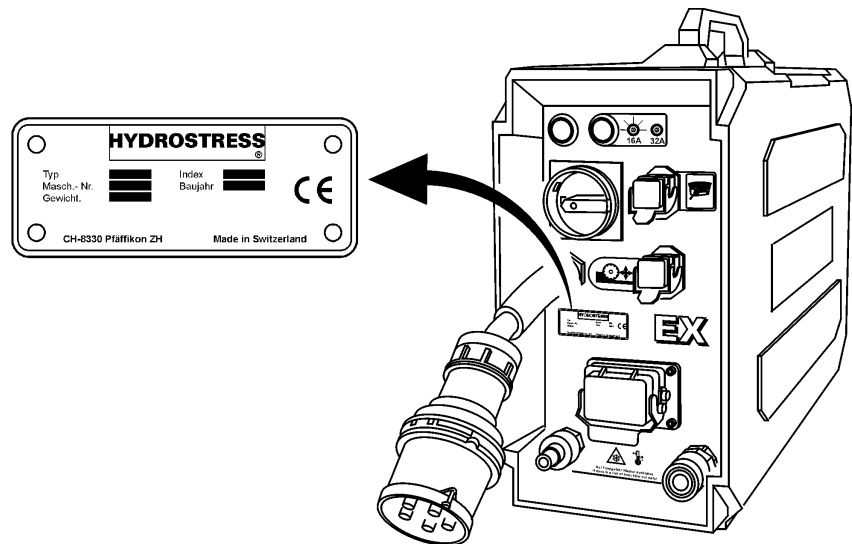
Tel. +41 (0)44 952 18 18

Fax +41 (0)44 952 18 00

www.tyrolit.com

0 Spare Parts List

0.1 Ordering details



When spare parts are ordered we need the following details:

- Machine type according to nameplate (e.g. EX)
- Machine number according to nameplate (e.g. 10979712)
- Machine index according to nameplate (e.g. 000)
- Spare part number according to the spare parts list (e.g. 10979676)

For orders, questions and information please contact your responsible branch office.

Utilisation de la liste des pièces détachées

La liste des pièces détachées n'est pas une instruction de montage ou de démontage. Cette liste sert exclusivement à trouver simplement et rapidement les pièces détachées, qui peuvent être commandées à l'adresse mentionnée ci-dessous.

Prescription de sécurité



Danger

Le montage ou le démontage des modules peut présenter des risques dont il n'est pas fait mention dans cette liste des pièces détachées.

Il est strictement interdit d'employer cette liste des pièces détachées à des fins de montage ou de démontage. Pour les opérations de montage et de démontage, il faut exclusivement suivre les descriptions correspondantes dans le mode d'emploi.

Le non-respect de la présente prescription peut conduire à des blessures, pouvant même entraîner la mort.

Commandes



Information

Pour éviter des livraisons inappropriées, il est conseillé de vérifier avant l'expédition l'exactitude et l'exhaustivité des indications fournies dans la commande (voir Données de commande).

Il faut aussi veiller à bien indiquer l'adresse de livraison en entier.

Adresse de commande :

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Suisse

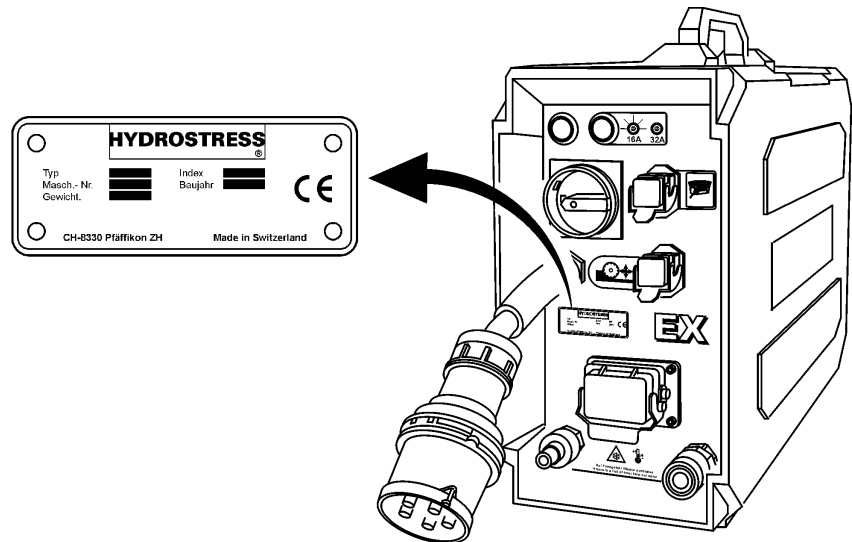
Téléphone +41 (0)44 952 18 18

Télécopie +41 (0)44 952 18 00

www.tyrolit.com

0 Liste des pièces détachées

0.1 Données de commande



Lors de la commande de pièces détachées, nous avons besoin des données suivantes :

- Type de machine selon la plaque signalétique (p.ex. EX)
- Numéro de machine selon la plaque signalétique (p.ex. 10979712)
- Indice de machine selon la plaque signalétique (p.ex. 000)
- Numéro de pièce détachée selon la liste des pièces détachées (p.ex. 10979676)

Pour les commandes, questions et informations, vous êtes prié de vous adresser à la filiale compétente.

Uso della lista di parti di ricambio

La lista di parti di ricambio non è un manuale d'istruzioni per montaggio o smontaggio. Questa lista di parti di ricambio serve esclusivamente per trovare in modo semplice e rapido parti di ricambio che possono essere ordinate all'indirizzo riportato qui sotto.

Norme di sicurezza



Pericolo

Il montaggio o lo smontaggio di componenti della macchina può comportare pericoli che non sono indicati in questa lista di parti di ricambio.

E' assolutamente vietato servirsi di questa lista di parti di ricambio per scopo di montaggio o di smontaggio. Per operazioni di montaggio o smontaggio occorre seguire esclusivamente le relative istruzioni nel manuale per l'uso della macchina.

La mancata osservanza di queste norme può comportare lesioni, e nel caso peggiore anche la morte.

Ordinazioni



Informazione

Per evitare forniture incorrette, occorre verificare prima dell'invio dell'ordinazione se i dati indicati in essa sono corretti e completi (vedere la lista dei dati per l'ordinazione).

Occorre verificare anche se l'indirizzo per la consegna è esatto e completo.

Indirizzo per ordinazioni:

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Svizzera

Tel. +41 (0)44 952 18 18

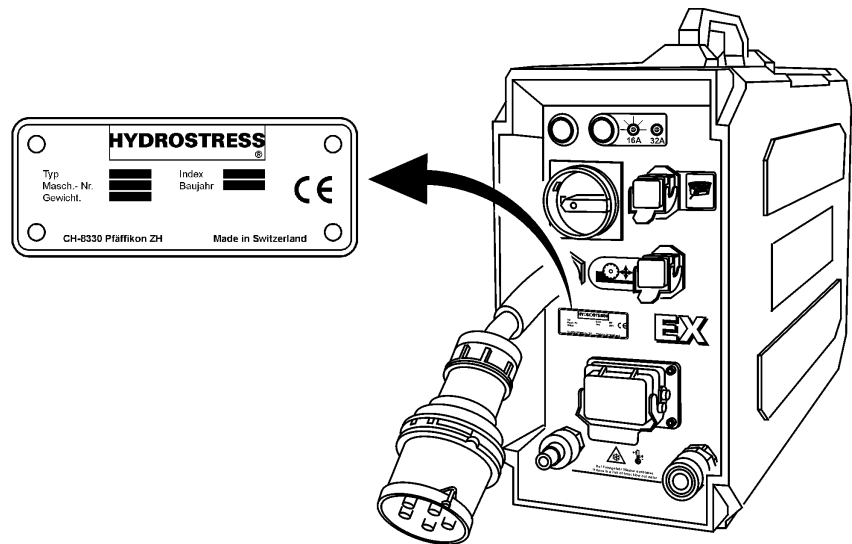
Fax +41 (0)44 952 18 00

e-mail: info@tyrolit.com

www.tyrolit.com

0 Lista di parti di ricambio

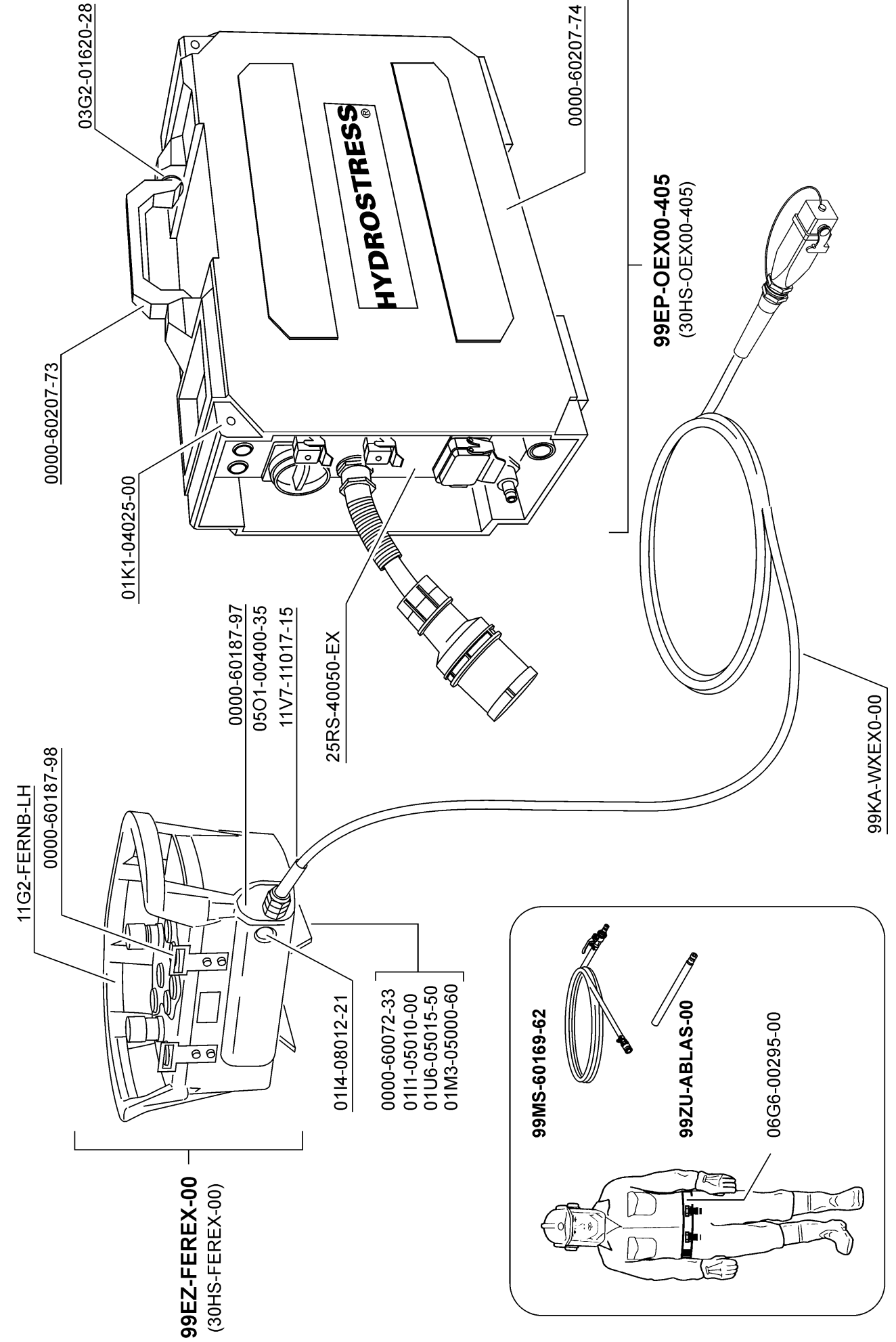
0.1 Dati per l'ordinazione



Per ordinazioni di parti di ricambio ci occorrono i dati seguenti:

- Tipo di macchina indicato sulla targhetta della macchina (per es. EX)
- Numero della macchina indicato sulla targhetta della macchina (per es. 10979712)
- Indice della macchina indicato sulla targhetta della macchina (per es. 000)
- Numero della parte di ricambio secondo la lista di parti di ricambio (per es. 10979676)

Per ordinazioni, domande o richieste d'informazioni Vi preghiamo di rivolgerVi all'agenzia competente.



99EP-OEX00-405	10980132	Steuerung EX	Control unit EX	Commande EX	Comando EX	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
25RS-40050-EX	10980158	Rüsts. Steuerung EX	Rüsts. Steuerung EX	Rüsts. Steuerung EX	Rüsts. Steuerung EX	1
0000-60207-71	10979676	Rückblech Wandsägesteuer.	Rückblech Wandsägesteuer.	Rückblech Wandsägesteuer.	Rückblech Wandsägesteuer.	1
0000-60207-73	10980200	Griff Steuerungsgeh. EX	Griff Steuerungsgeh. EX	Griff Steuerungsgeh. EX	Griff Steuerungsgeh. EX	1
0000-60207-74	10980201	Gehäusesatz Steuer. EX/WX	Gehäusesatz Steuer. EX/WX	Gehäusesatz Steuer. EX/WX	Gehäusesatz Steuer. EX/WX	1
0116-06010-23	979299	Inb-Schr.extr.n.Kopf M6 x 10	Allen head screw M6 x 10	Vis à six pans creux bas M6 x 10	Vite ad esagono M6 x 10	4
01K1-04025-00	10980203	PT-Schraube K40x25	PT-Schraube K40x25	PT-Schraube K40x25	PT-Schraube K40x25	10
03G2-01620-28	10980202	Bundlagerbüchse Dm16/20	Bundlagerbüchse Dm16/20	Bundlagerbüchse Dm16/20	Bundlagerbüchse Dm16/20	2
7777-VERPA-EWX	10980345	Verpackung EX/WX Steuer.	Verpackung EX/WX Steuer.	Verpackung EX/WX Steuer.	Verpackung EX/WX Steuer.	1
XXXL-00000-99	968276	Typenschild	Type plate	Plaque de fabrication	Targhetta del modello	1
99EZ-FEREX-00	10979519	Fernbedienung kpl. EX	Remote control cpl. EX	Télécommande cpl. EX	Telecomando cpl. EX	1
0000-60072-33	978195	Schnappblech zu EL.-Steu.	Catchplate for el. contr.	Schnappblech zu EL.-Steu.	Schnappblech zu EL.-Steu.	1
0000-60187-97	10977697	Kabeltülle zu FB	Kabeltülle zu FB	Kabeltülle zu FB	Kabeltülle zu FB	1
0000-60187-98	10977286	Gurtflasche zu FB	Gurtflasche zu FB	Gurtflasche zu FB	Gurtflasche zu FB	2
0111-05010-00	971688	Inbus-Schraube M5 x 10	Allen head screw M5 x 10	Vis à six pans creux M5 x 10	Vite ad esagono cavo M5 x 10	4
0114-08012-21	10978654	Senkkopfschraube M8 x 12	Countersunk head screw M8 x 12	Vis à tête fraisée M8 x 12	Vite a testa svasata M8 x 12	1
01M3-05000-60	971859	Stop-Mutter M5 nied.Form	Stop nut M5	Ecrou d'arrêt f.basse M5	Dado d'arresto bas. M5	4
01U6-05015-50	977189	U-Scheibe Dm 5.3/15x1.2	Washer dia 5.3/15x1.2	Rondelle Dm 5.3/15x1.2	Rondella Dm 5.3/15x1.2	4
05O1-00400-35	972260	O-Ring 40x3.5 N 70	O-ring seal 40x3.5	Anneau torique d'étanchéité 40.x3.5	Guarnizione OR 40x3.5	1
06G6-00295-00	10977687	Bauchgurt Fernbedienung	Bauchgurt Fernbedienung	Bauchgurt Fernbedienung	Bauchgurt Fernbedienung	1
11G2-FERNB-LH	10977713	Gehäuse kpl.Fernbed. LH	Gehäuse kpl.Fernbed. LH	Gehäuse kpl.Fernbed. LH	Gehäuse kpl.Fernbed. LH	1
11P1-EX000-01	10980330	Printplatte kpl. FB EX	Printplatte kpl. FB EX	Printplatte kpl. FB EX	Printplatte kpl. FB EX	1
11V7-11017-15	10980331	KV m.St.Spirale M16x1.5	KV m.St.Spirale M16x1.5	KV m.St.Spirale M16x1.5	KV m.St.Spirale M16x1.5	1
99KA-WXEX0-00	10980328	FB-Kabel m. Stecker WX/EX	FB-Kabel m. Stecker WX/EX	FB-Kabel m. Stecker WX/EX	FB-Kabel m. Stecker WX/EX	1
99MS-60169-62	984488	Verbindungsschlauch	Verbindungsschlauch	Verbindungsschlauch	Verbindungsschl.	1
99ZU-ABLAS-00	974546	Ausblasrohr zu Aggregaten	Blowout tube	Ausblasrohr zu Aggregaten	Ausblasrohr zu Aggregaten	1